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Money,

Weights,

AND

Measures

OF

The American Republics.

BUREAU OF THE AMERICAN REPUBLICS,

Washington D. C., U. S. A.

Bulletin No. 4, April, 1891.

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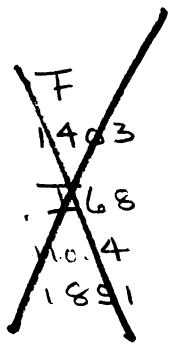

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Money, Weights, and Measures.

VALUE OF AMERICAN COINS.

[Estimate of Director of Mint, April 1, 1891.]

Synoptical table of the gold and silver coins of the Western Hemisphere.

Country.	Gold.		Silver.		
	Denomination of coin.	Value in U. S. gold coin.	Denomination of coin.	Value compared with silver in U. S. silver dollars.	Value in U. S. gold coin based upon commercial value of silver used in estimating value of foreign silver coins, Apr. 1, 1891.
		Dollars.		*Dollars.*	*Dollars.*
Argentine Republic	Argentine	4.824	Peso	0.935	0.735
	½ Argentine	2.412	50 centavos	.468	.368
			20 centavos	.187	.147
			10 centavos	.094	.074
			5 centavos	.047	.037
Bolivia	Onza	14.954	Boliviano	.935	.735
	½ onza	7.477	½ boliviano	.468	.368
	¼ onza (doubloon)	3.738	¼ boliviano	.234	.134
	⅛ onza (escudo)	1.869	⅛ boliviano	.117	.067
	1/16 onza (½ escudo)	.935	1/16 boliviano	.058	.034
Brazil	20 milreis	10.923	2 milreis	.972	.764
	10 milreis	5.462	Milreis	.486	.382
	5 milreis	2.731	½ milreis or 500 reis	.243	.191
Central American States: Coined prior to 1870—					
Costa Rica	Onza or doubloon	15.736	Peso	.935	.735
Guatemala	½ onza	7.868	½ peso	.468	.368

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Synoptical table of the gold and silver coins of the Western Hemisphere—Continued.

Country.	Gold.		Silver.		
	Denomination of coin.	Value in U. S. gold coin.	Denomination of coin.	Value compared with silver in U. S. silver dollars.	Value in U. S. gold coin based upon commercial value of silver used in estimating value of foreign silver coins, Apr. 1, 1891.
Central American States—Cont'd: Coined since 1870—		*Dollars.*		*Dollars.*	*Dollars.*
Honduras	20 pesos	19.295	½ peso	0.234	0.184
Nicaragua	10 pesos	9.647	Dime	.087	.068
Salvador	5 pesos	4.823	½ dime	.043	.034
	2 pesos	1.929			
	Peso	.964			
Chile	Condor	9.123	Peso	.935	.735
	Doubloon	4.562	50 centavos	.468	.368
	Escudo	1.824	20 centavos	.187	.147
	Peso	.912	Decimo	.094	.074
			½ decimo	.047	.037
Colombia	Double condor	19.295	Peso	.935	.735
	Condor	9.647	2 decimo	.174	.137
			Decimo	.087	.068
			½ decimo	.043	.022
Cuba	Spanish quadruple (onza).	15.736			
	Doubloon (Isabella)	5.017			
	Alphonse (25 pesetas).	4.823			
Ecuador	Double condor	19.295	Sucre	.935	.735
	Condor	9.647	½ sucre	.468	.368
	Doubloon	3.859	2 dimes	.187	.147
	⅕ condor	1.929	Dime	.094	.074
	$\frac{1}{10}$ condor	.964	½ dime	.047	.037
Mexico	20 pesos	19.679	Peso	1.016	.800
	10 pesos	9.839	50 centavos	.508	.400
	5 pesos	4.919	25 centavos	.254	.200
	2½ pesos	2.459	10 centavos	.102	.080
	Peso	.984	5 centavos	.051	.040
Peru	20 sols	19.295	Sol	.935	.735
	10 sols	9.647	½ sol	.468	.368
	5 sols	4.823	¼ sol	.187	.147
	2 sols	1.929	Dinero	.094	.074
	Sol	.964	½ dinero	.047	.037
Venezuela	100 bolivars	19.295	5 bolivars	.935	.735
	50 bolivars	9.647	2 bolivars	.347	.294
	20 bolivars	3.859	Bolivar	.174	.147
	10 bolivars	1.929	½ bolivar	.087	.074
	5 bolivars	.964	⅕ bolivar	.035	.029

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Synoptical table of the gold and silver coins of the Western Hemisphere—Continued.

Country.	Gold.		Silver.		
	Denomination of coin.	Value in U. S. gold coin.	Denomination of coin.	Value compared with silver in U. S. silver dollars.	Value in U. S. gold coin based upon commercial value of silver used in estimating value of foreign silver coins, Apr. 1, 1891.
		Dollars.		*Dollars.*	*Dollars.*
Canada	English pound sterling and American dollar of 100 cents.		50 cents	0.446	0.351
			25 cents	.223	.176
			10 cents	.089	.070
			5 cents	.044	.035
Newfoundland*	2 dollars (200 cents =100 pence).	2.027	50 cents	.453	.356
			20 cents	.181	.142
			10 cents	.090	.071
			5 cents	.045	.036
United States	Double eagle	20.000	Standard dollar	1.000	.786
	Eagle	10.000	½ dollar	.467	.367
	½ eagle	5.000	¼ dollar	.233	.184
	¼ eagle	2.500	Dime	.093	.073

*The monetary unit is nominally a dollar, 985 of which are worth 1,000 American dollars, and 480 = 100 sovereigns.

COINAGE OF MEXICO.

The metric system of weights and measures became compulsory in Mexico January 1, 1884.

The principal coinage is of silver, consisting in every 12 dineros of $10\frac{5}{6}$ dineros of pure metal (1,000 fine) and $1\frac{1}{6}$ dineros of alloy—that is, it is 0.902777 fine. The monetary unit is the peso. The gold coinage is not in general circulation. The fineness of the "old doubloon" is 870; the "twenty pesos" of the republic (new), 873, and the "twenty pesos" of the empire, 875 fine. The so-called nickel coins vary from 20 to 25 per cent. of nickel and 75 to 80 per cent. of copper. Pesos continue to be struck with the legend 8R, meaning 8 reales. The piece of 50 centavos is called 4 reales, also tostón; that of 25 centavos, 2 reales, also peseta.

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Coinage of Mexico.—Continued.

Denomination.	Fineness.	Value in pesos.	Weight in—		Diameter in—	
			Grammes.	Troy ounces.	Millimetres.	Inches.
Gold coins:*						
Double hidalgo	875	20.00	33.841	1.0860	34	1.33858
Hidalgo	875	10.00	16.920	.5430	27	1.06299
Medio hidalgo	875	5.00	8.460	.2715	22	.86614
Cuarto hidalgo	875	2.50	4.230	.13575	18	.70866
Decimo hidalgo	875	1.00	1.692	.05430	15	.59055
Silver coins:*						
Peso	901	1.00	27.073	.866	37	1.45669
50 centavos	901	.50	13.536	.433	30	1.18110
25 centavos	901	.25	6.768	.2165	25	.98425
10 centavos	901	.10	2.707	.0866	17	.66929
Nickel and copper coins:*						
5 centavos	(†)	.05	5	.16075	20	.78740
2 centavos	(†)	.02	3	.09645	18	.70866
1 centavo	(†)	.01	2	.06430	16	.62992

*There were formerly coined in gold the onza, = $16 in silver; the real, = $0.12½; medio real, = $0.06¼; cuartilla, = $0.03⅛. And in copper the tlaco, = $0.01/16; centavo, = $0.01. The grano, as a monetary unit, was 1/128 of a peso, or 1/16 of a real.

†See note above.

There is now a project for a revision of the monetary laws and coinage of Mexico under consideration by the Government of that Republic. The finance minister submitted to the Congress recently a plan for a system of gold, silver, copper, and brass coins of new designs and somewhat different in value from that now in use.

COINAGE OF CHILE.

Denomination.	Fineness.	Value.	Weight in grains.			Diameter.	
		Pesos.	Pure metal.	Alloy.	Full weight.	Millimetres.	Inches.
Gold coins:							
Condor	.900	10.00	211.850	23.523	235.374	28.5	1.122045
Doblon	.900	5.00	105.925	11.777	117.702	22.0	.866140
Escudo	.900	2.00	42,369	4.714	47.084	16.5	.649605
Peso	.900	1.00	21.184	2.350	23.534	14.0	.55180
Silver coins:							
Peso	.900	1.00	347.227	38.580	385.808	37.0	1.45669
Medio peso	.900	.50	173.613	19.290	192.904	30.0	1.18110
Quinto	.900	.20	69.445	7.716	77.161	23.0	.90651
Decimo	.900	.10	34.336	4.243	38.580	18.0	.70866
Medio decimo,	.900	.05	17.361	1.929	19.290	15.0	.59055
Copper coins:							
Dos centavos	(*)	.02	106.625	5.401	108.026	25.0	.98425
Un centavo	(*)	.01	51.3125	25.8495	77.162	21.0	.86277
Medio centavo	(*)	.005	25.65625	20.64075	46.297	19.0	.74803

*Copper, .95; nickel, .05.

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PRODUCTION AND COINAGE OF GOLD AND SILVER.

Statement of the production and coinage of gold and silver of each of the American Republics for 1889.

[Data furnished by the Director of the United States Mint.]

Countries.	Production.		Coinage.	
	Gold.	Silver.	Gold.	Silver.
	Dollars.	*Dollars.*	*Dollars.*	*Dollars.*
United States	32,800,000	64,646,000	21,413,931	35,496,683
Mexico	905,000	55,517,000	319,907	25,294,726
Argentine Republic	31,000	425,000	.....	.....
Chile	1,962,430	7,723,957	.....	.....
Peru	105,000	3,128,000	.....	.....
Colombia	3,000,000	1,000,000	.....	216,136
Venezuela	1,415,598	.....	.....	.....
Brazil	445,300	.....	.....	.....
Ecuador	.....	.....	.....	.....
Bolivia	59,800	9,578,000	.....	.....
Honduras, Nicaragua, Costa Rica	150,000	2,000,000	.....	258,010
Haiti	.....	.....	.....	.....
Total	40,874,128	144,017,957	21,733,838	61,265,555

Estimate of the aggregate production of the precious metals in all countries from 1493 *to* 1889.

Countries.	Gold.	Silver.	Total.
	Dollars.	*Dollars.*	*Dollars.*
Germany	7,875,637	335,879,661	343,755,298
Austria-Hungary	242,814,436	293,586,689	536,401,125
Rest of Europe	1,859,242	312,184,073	314,043,315
Russia	842,193,544	89,635,618	931,829,162
Africa	392,147,940	231,960	392,379,900
Mexico	143,864,542	3,044,985,343	3,188,249,885
Colombia	596,501,675	.....	596,501,675
Peru	81,264,832	1,086,453,084	1,167,717,916
Bolivia	145,362,245	1,412,261,617	1,557,623,862
Chile	136,851,007	164,089,573	300,940,580
Brazil	517,336,528	115,850	517,452,378
United States	1,501,833,789	849,352,786	2,351,186,575
Australia	1,294,448,223	14,577,725	1,309,025,948
Various countries	242,492,844	110,980,504	353,473,348
Grand total	6,146,246,484	7,714,334,483	13,860,580,967

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WEIGHTS.

Metric denominations and values.		Equivalents in denominations in use.
Names.	Number of grammes.	Avoirdupois weight.
Millier or tonneau	1,000,000	2204.6 pounds.
Quintal	100,000	220.46 pounds.
Myriagramme	10,000	22.046 pounds.
Kilogramme or kilo	1,000	2.2046 pounds.
Hectogramme	100	3.5274 ounces.
Decagramme	10	0.3527 ounce.
Gramme	1	15.432 grains.
Decigramme	$\frac{1}{10}$	1.5432 grain.
Centigramme	$\frac{1}{100}$	0.1543 grain.
Milligramme	$\frac{1}{1000}$	0.0154 grain.

CHIEF FOREIGN COMMERCIAL UNITS.

[Reduced to United States and metric standards. Countries which have not yet (or have not entirely adopted the metric system.]

ARGENTINE REPUBLIC.

Weights and measures.	United States.	Metric.
Libra	1.0127 pound	.4593 kilo.
Arroba = 25 libras	25.3175 pounds	11.4413 kilos.
Frasco	2.5096 quarts	2.3749 litres.
Vara = 3 pies	34.1208 inches	.8667 metre.

CENTRAL AMERICA.

Libra	1.043 pound	.4731 kilo.
Cantara = 4 cuartillas	4.2631 gallons	16.1371 litres.
Fanega = 4 cuartillas	1.5745 bushel	55.479 litres.
Vara	38.874 inches	.8349 metre.

CHILE.

Libra	1.043 pound	.4731 kilo.
Quartillo	1.624 quart	1.1007 litres.
Fanega	2.575 bushels	90.733 litres.
Vara	33.367 inches	.8475 metre.

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Chief foreign commercial units—Continued.

CUBA.

Weights and measures.	United States.	Metric.
Libra = 16 onzas	1.0161 pound	.4609 kilo.
Arroba = 25 libras	25.4024 pounds	11.5226 kilos.
Arroba = 32 quartillos	4.263 gallons	16.1369 litres.
Fanega = 12 almudes	1.599 bushel	56.3425 litres.
Vara = 3 pies	33.384 inches	.8479 metre.

MEXICO.

Libra	1.01465 pound	.46024634 kilo.
Arroba = 25 libras	25.3664 pounds	11.506159 kilos.
Frasco	2.5 quarts	2.3672 litres.
Fanega	1.577 bushels	90.814888 litres.
Vara	33 inches	.838 metre.

PERU.

Libra	1.0143 pound	.46 kilo.
Vara	33.367 inches	.8475 metre.

URUGUAY.

Libra	1.0143 pound	.46 kilo.
Fanega	7.776 bushels	274 litres.

VENEZUELA.

Libra = 16 onzas	1.0161 pound	.4609 kilo.
Arroba = 25 libras	25.4024 pounds	11.5226 kilos.
Arroba = 32 quartillos	4.263 gallons	16.1369 litres.
Fanega = 12 almudes	1.599 bushel	56.3425 litres.
Vara = 3 pies	33.384 inches	.8479 metre.

NOTE.—Sandwich Islands, same as the United States.

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COMPARISON OF THE METRIC AND UNITED STATES STANDARDS.

[Length: 1 metre = 100 centimetres.]

Metric.		United States.	
Millimetre =	.0393 inch.	1 inch =	2.5399 centimetres.
1 centimetre =	.3937 inch.	1 foot =	30.4794 centimetres.
1 metre =	39.3707 inches.	1 yard =	.9143 metre.
1 kilometre =	0.6213 mile.	1 mile =	1.6093 kilometre.

1 geographical mile or knot = 1.152 mile = 2,027 yards = 1,854 metres.
60 geographical miles = 1 degree.

[Square: 1 are = 100 square metres.]

1 square centimetre =	.1550 sq. in.	1 square inch =	6.4513 square cent.
1 square metre =	10.7642 sq. ft.	1 square foot =	.0928 square metre.
1 are =	119.6033 sq. yds.	1 square yard =	.8360 square metre.
1 hectare =	2.4711 acres.	1 acre =	.4046 hectolitre.

[Cubic: Cubic metre, also called "stere."]

1 cubic metre =	35.3165 cubic feet.	1 cubic foot =	.02831 cubic metres.

1 United States ton of shipping = 40 cubic feet = 32.143 United States bushels = 1.1326 cubic metres.
Minimum freight charged on a SS. B. L. is on 20 cubic feet.

[Weight: 1 kilogramme = 1,000 grammes.]

1 gramme =	15.4323 grains.	1 pound =	.4535 kilo.
1 kilogramme =	2.2046 pounds.	1 cwt. =	50.8023 kilos.
1 tonneau =	2,204.62 pounds.	1 ton =	1,016.0475 kilos.

[Dry measure: 1 litre = 100 centilitres.]

1 centilitre =	.0181 pint.	1 pint =	35.0580 centilitres.
1 litre =	.9081 quart.	1 quart =	1.1011 litres.
1 hectolitre =	2.8379 bushels.	1 bushel =	35.2371 litres.

[Liquid measure: 1 litre = 100 centilitres.]

1 centilitre =	.0211 pint.	1 pint =	47.3150 centilitres.
1 litre =	1.0567 quarts.	1 quart =	.9463 litre.
1 hectolitre =	2.64186 gallons.	1 gallon =	3.7852 litres.

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The metric system is now recognized by the following countries: Argentine Republic, Austria, Belgium, Bolivia, Brazil, Chile, Costa Rica, Ecuador, Egypt, France, Germany, Greece, Italy, Mexico, Netherlands, Portugal, Spain, Switzerland, United States of America, and United States of Colombia.

UNITED STATES CUSTOM HOUSE STANDARDS.

Bushel is estimated as per following weights:

	Pounds.		*Pounds.*
Barley	48	Linseed	56
Barley malt	34	Oats	32
Buckwheat	42	Pease	60
Castor beans	50	Potatoes	60
Coal	80	Rye	56
Corn	56	Wheat	60
Corn meal	48		

Ton.—The English ton of 2,240 pounds avoirdupois.

Oils.—Cotton-seed, flax or linseed, 7½ pounds to the gallon.

Sugars and molasses are tested by the polariscope.

Vinegar.—That strength which requires 35 grains of bicarbonate of potash to neutralize 1 ounce troy of vinegar.

Proof spirit is understood to be that alcoholic liquor which contains one-half its volume of alcohol of a specific gravity of .7939 at 60° Fahrenheit.

The hydrometer is an instrument constructed to determine the specific gravity of fluids. The standard hydrometer actually in use by the customs and internal revenue is that of G. Tagliabue.

MEASURES.

The following tables exhibit the various designations of weights and measures under the metric system, and their equivalents in existing American or English weights and measures, as legalized by act of Congress, July 27, 1866:

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MEASURES OF LENGTH.

Metric denominations and values.	Equivalents in denominations in use.
Myriametre..... 10,000 metres	6.2137 miles.
Kilometre .....1,000 metres	0.62137 mile, or 3,280 feet 10 inches,
Hectometre.....100 metres	328 feet, 1 inch.
Decametre.,.....10 metres	393.7 inches.
Metre.....metre	39.37 inches.
Decimetre.. .....$\frac{1}{10}$ of a metre	3.937 inches.
Centimetre.... .....$\frac{1}{100}$ of a metre	0.3937 inch.
Millimetre..... .....$\frac{1}{1000}$ of a metre	0.0397 inch.

MEASURES OF CAPACITY.

Metric denominations and values.			Equivalents in denominations in use.	
Names.	No. of litres.	Cubic measure.	Dry measure.	Liquid or wine measure.
Kilolitre, or stere.	1,000	1 cubic metre.....	1.308 cubic yard.	264.17 gallons.
Hectolitre...	100	$\frac{1}{10}$ of a cubic metre.	2 bushels 3.35 pecks.	26.417 gallons.
Decalitre. ...	10	10 cubic decimetres.	9.08 quarts	2.6417 gallons.
Litre.....	1	1 cubic decimetre..	0.908 quart....	1.0567 quarts.
Decilitre.....	$\frac{1}{10}$	$\frac{1}{10}$ of a cubic decimetre.	6.1022 cubic inches.	0.845 gill.
Centilitre.....	$\frac{1}{100}$	10 cubic decimetres.	0.6102 cubic inch.	0.338 fluid ounce.
Millilitre		1 cubic centimetre.	0.061 cubic inch.	0.27 fluid ounce.

MEASURES OF SURFACE.

Metric denominations and values.	Equivalents in denominations in use.
Hectare ....10,000 square metres	2.471 acres.
Are ..... 100 square metres	119.6 square yards.
Centare ..... 1 square metre	1,550 square inches.

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